SEQUENCE LISTING

<110> Venta, Patrick J.
Brewer, George J.
Vilma, Yuzbasiyan-Gurkan
Schall, William D.

<120> DNA ENCODING CANINE VON WILLEBRAND FACTOR AND METHODS
OF USE

<130> UMV-1226CPPCUS

<150> 09/132,652
<151> 1998-08-11

<150> PCT/US99/18153
<151> 1999-08-10

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<170> PatentIn Ver. 2.0

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Ser Met Tyr Ser Phe Ala Gly Asp Cys Ser Tyr Leu Leu Ala Gly Asp
       50             55             60

Cys Gln Glu His Ser Ile Ser Leu Ile Gly Gly Phe Gln Asn Asp Lys
 65             70             75                 80

Arg Val Ser Leu Ser Val Tyr Leu Gly Glu Phe Phe Asp Ile His Leu
             85             90                 95

Phe Val Asn Gly Thr Met Leu Gln Gly Thr Gln Ser Ile Ser Met Pro
          100            105            110

Tyr Ala Ser Asn Gly Leu Tyr Leu Glu Ala Glu Ala Gly Tyr Tyr Lys
          115            120            125

Leu Ser Ser Glu Ala Tyr Gly Phe Val Ala Arg Ile Asp Gly Asn Gly
       130            135            140

Asn Phe Gln Val Leu Leu Ser Arg Ala Tyr Ile Asn Lys Thr Tyr Gly
  145            150            155            160

Leu Cys Gly Asn Phe Asn Ile Phe Ala Glu Asp Asp Phe Lys Thr Gln
             165            170            175

Glu Gly Thr Leu Thr Ser Asp Pro Tyr Asp Phe Ala Asn Ser Trp Ala
          180            185            190

Leu Ser Ser Gly Glu Gln Arg Tyr Tyr Arg Val Pro Leu Leu Ala Ala
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Cys Val Gln Gly Met Glu Cys Pro Cys Ala Val Leu Leu Glu Tyr Ala
           260   265   270

Arg Ala Cys Ala Gln Gln Gly Ile Val Leu Tyr Gly Trp Thr Asp His
           275   280   285

Ser Val Cys Arg Pro Ala Cys Pro Ala Gly Met Glu Tyr Lys Glu Cys
           290   295   300

Val Ser Pro Cys Thr Arg Thr Cys Gln Ser Leu His Val Lys Glu Val
305   310   315   320

Cys Gln Glu Gln Cys Val Asp Gly Cys Ser Cys Pro Glu Gly Gln Leu
           325   330   335

Leu Asp Glu Gly His Cys Val Gly Ser Ala Glu Cys Ser Cys Val His
           340   345   350

Ala Gly Gln Arg Tyr Pro Pro Gly Ala Ser Leu Leu Gln Asp Cys His
           355   360   365

Thr Cys Ile Cys Arg Asn Ser Leu Trp Ile Cys Ser Asn Glu Glu Cys
           370   375   380

Pro Gly Glu Cys Leu Val Thr Gly Gln Ser His Phe Lys Ser Phe Asp
385   390   395   400

Asn Arg Tyr Phe Thr Phe Ser Gly Val Cys His Tyr Leu Leu Ala Gln
           405   410   415

Asp Cys Gln Asp His Thr Phe Ser Val Val Ile Glu Thr Val Gln Cys
           420   425   430

Ala Asp Asp Leu Asp Ala Val Cys Thr Arg Ser Val Thr Val Arg Leu
           435   440   445

... ... His His Asn ... ... Val Lys ... Lys A.. ... ... Val

... ... Arg ... ... Arg Ile ... Ile ... ... Arg ...

Arg Ile Gln His Thr Val Met Ala Ser Val Arg Leu Ser Tyr Gly Glu

... ... Met Arg ... Arg ... Arg ... Arg ... ... Val ... ...

Leu Val Glu Asp Phe Gly Asn Ala Trp Lys Leu Leu Gly Ala Cys Glu
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Asn Leu Gln Lys Gln His Arg Asp Pro Cys Ser Leu Asn Pro Arg Gln
              565   570   575

Ala Arg Phe Ala Glu Glu Ala Cys Ala Leu Leu Thr Ser Ser Lys Phe
          580   585   590

Glu Pro Cys His Arg Ala Val Gly Pro Gln Pro Tyr Val Gln Asn Cys
      595   600   605

Leu Tyr Asp Val Cys Ser Cys Ser Asp Gly Arg Asp Cys Leu Cys Ser
    610   615   620

Ala Val Ala Asn Tyr Ala Ala Ala Val Ala Arg Arg Gly Val His Ile
625   630   635   640

Ala Trp Arg Glu Pro Gly Phe Cys Ala Leu Ser Cys Pro Gln Gly Gln
              645   650   655

Val Tyr Leu Gln Cys Gly Thr Pro Cys Asn Met Thr Cys Leu Ser Leu
          660   665   670

Ser Tyr Pro Glu Glu Asp Cys Asn Glu Val Cys Leu Glu Ser Cys Phe
          675   680   685

Ser Pro Pro Gly Leu Tyr Leu Asp Glu Arg Gly Asp Cys Val Pro Lys
      690   695   700

Ala Gln Cys Pro Cys Tyr Tyr Asp Gly Glu Ile Phe Gln Pro Glu Asp
705   710   715   720

Ile Phe Ser Asp His His Thr Met Cys Tyr Cys Glu Asp Gly Phe Met
              725   730   735

His Cys Thr Thr Ser Gly Gly Leu Gly Ser Leu Leu Pro Asn Pro Val
              740   745   750

Leu ... ... Arg Tyr His ... ... Lys Arg ... ... Tyr Arg

... ... Met Val ... ... Val Tyr ... Ala Asp Asn ... Arg Ala ...

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... ... Arg Tyr Val ... Gly Lys Leu Tyr ... ... Arg Met Val Arg

Cys Val Cys Arg Asp Arg Lys Trp Thr Cys Thr Asp His Val Cys Asp
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Ala Thr Cys Ser Ala Ile Gly Met Ala His Tyr Leu Thr Phe Asp Gly
865   870   875   880

Leu Lys Tyr Leu Phe Pro Gly Glu Cys Gln Tyr Val Leu Val Gln Asp
            885   890   895

Tyr Cys Gly Ser Asn Pro Gly Thr Leu Arg Ile Leu Val Gly Asn Glu
     900   905   910

Gly Cys Ser Tyr Pro Ser Val Lys Cys Lys Lys Arg Val Thr Ile Leu
     915   920   925

Val Glu Gly Gly Glu Ile Glu Leu Phe Asp Gly Glu Val Asn Val Lys
  930   935   940

Lys Pro Met Lys Asp Glu Thr His Phe Glu Val Val Glu Ser Gly Gln
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Tyr Val Ile Leu Leu Leu Gly Lys Ala Leu Ser Val Val Trp Asp His
            965   970   975

Arg Leu Ser Ile Ser Val Thr Leu Lys Arg Thr Tyr Gln Glu Gln Val
            980   985   990

Cys Gly Leu Cys Gly Asn Phe Asp Gly Ile Gln Asn Asn Asp Phe Thr
         995   1000   1005

Ser Ser Ser Leu Gln Ile Glu Glu Asp Pro Val Asp Phe Gly Asn Ser
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Trp Lys Val Asn Pro Gln Cys Ala Asp Thr Lys Lys Val Pro Leu Asp
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Ser Ser Pro Ala Val Cys His Asn Asn Ile Met Lys Gln Thr Met Val
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Arg ... ... Arg Ile ... Thr ... Arg Ile ... ... Arg Tyr Asn

Arg Leu Val Arg ... ... Ile Phe ... Asp ... ... Ile Tyr Arg Thr
     1075   1080

Cys Ser Cys Glu Ser Ile Gly Asp Cys Thr Cys Phe Cys Asp Thr Ile

Ala Ala Tyr Ala His ... ... Ala ... His ... Lys Val ... Ala Ile

Cys Pro Ile Thr Cys Gln His Pro Glu Pro Leu Ala Cys Pro Val Gln
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Cys Val Glu Gly Cys His Ala His Cys Pro Pro Gly Lys Ile Leu Asp
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Glu Leu Leu Gln Thr Cys Ile Asp Pro Glu Asp Cys Pro Val Cys Glu
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Val Ala Gly Arg Arg Leu Ala Pro Gly Lys Lys Ile Ile Leu Asn Pro
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Ser Asp Pro Glu His Cys Gln Ile Cys Asn Cys Asp Gly Val Asn Phe
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Thr Cys Lys Ala Cys Arg Glu Pro Gly Ser Val Val Val Pro Pro Thr
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Asp Gly Pro Ile Gly Ser Thr Thr Ser Tyr Val Glu Asp Thr Ser Glu
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Pro Pro Leu His Asp Phe His Cys Ser Arg Leu Leu Asp Leu Val Phe
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Leu Leu Asp Gly Ser Ser Lys Leu Ser Glu Asp Glu Phe Glu Val Leu
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Lys Val Phe Val Val Gly Met Met Glu His Leu His Ile Ser Gln Lys
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Arg Ile Arg Val Ala Val Val Glu Tyr His Asp Gly Ser His Ala Tyr
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Ile Glu Leu Lys Asp Arg Lys Arg Pro Ser Glu Leu Arg Arg Ile Thr
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Ser Gln Val Lys Tyr Ala Gly Ser Glu Val Ala Ser Thr Ser Glu Val
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Leu Cys Asp Leu Ala Pro Glu Ala Pro Ala Pro Thr Gln His Pro Pro
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Met Ala Gln Val Thr Val Gly Ser Glu Leu Leu Gly Val Ser Ser Pro
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Gly Pro Lys Arg Asn Ser Met Val Leu Asp Val Val Phe Val Leu Glu
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Gly Ser Asp Lys Ile Gly Glu Ala Asn Phe Asn Lys Ser Arg Glu Phe
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Met Glu Glu Val Ile Gln Arg Met Asp Val Gly Gln Asp Arg Ile His
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Val Thr Val Leu Gln Tyr Ser Tyr Met Val Thr Val Glu Tyr Thr Phe
          1540                1545                1550

Ser Glu Ala Gln Ser Lys Gly Glu Val Leu Gln Gln Val Arg Asp Ile
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Arg Tyr Arg Gly Gly Asn Arg Thr Asn Thr Gly Leu Ala Leu Gln Tyr
      1570              1575                1580

Leu Ser Glu His Ser Phe Ser Val Ser Gln Gly Asp Arg Glu Gln Val
1585              1590                1595                1600

Pro Asn Leu Val Tyr Met Val Thr Gly Asn Pro Ala Ser Asp Glu Ile
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Lys Arg Met Pro Gly Asp Ile Gln Val Val Pro Ile Gly Val Gly Pro
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His Ala Asn Val Gln Glu Leu Glu Lys Ile Gly Trp Pro Asn Ala Pro
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Ile Leu Ile His Asp Phe Glu Met Leu Pro Arg Glu Ala Pro Asp Leu
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Ser Lys Ala Val Val Ile Leu Val Thr Asp Val Ser Val Asp Ser Val
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Asp Ala Ala Ala Glu Ala Ala Arg Ser Asn Arg Val Thr Val Phe Pro
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Ile Gly Ile Gly Asp Arg Tyr Ser Glu Ala Gln Leu Ser Ser Leu Ala
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Gly Pro Lys Ala Gly Ser Asn Met Val Arg Leu Gln Arg Ile Glu Asp
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Leu Pro Thr Val Ala Thr Leu Gly Asn Ser Phe Phe His Lys Leu Cys
          1860                    1865                  1870

Ser Gly Phe Asp Arg Val Cys Val Asp Glu Asp Gly Asn Glu Lys Arg
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Pro Gly Asp Val Trp Thr Leu Pro Asp Gln Cys His Thr Val Thr Cys
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Leu Pro Asp Gly Gln Thr Leu Leu Lys Ser His Arg Val Asn Cys Asp
1905                    1910                    1915                  1920

Arg Gly Pro Arg Pro Ser Cys Pro Asn Gly Gln Pro Pro Leu Arg Val
              1925                    1930                  1935

Glu Glu Thr Cys Gly Cys Arg Trp Thr Cys Pro Cys Val Cys Met Gly
              1940                    1945                  1950

Ser Ser Thr Arg His Ile Val Thr Phe Asp Gly Gln Asn Phe Lys Leu
          1955                    1960                  1965
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Thr Tyr Gly Leu Lys Gly Ile Cys Asp Glu Asn Gly Ala Asn Asp Phe
         2085   2090   2095

Ile Leu Arg Asp Gly Thr Val Thr Thr Asp Trp Lys Ala Leu Ile Gln
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Glu Trp Thr Val Gln Gln Leu Gly Lys Thr Ser Gln Pro Val His Glu
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Glu Gln Cys Pro Val Ser Glu Phe Phe His Cys Gln Val Leu Leu Ser
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Glu Leu Phe Ala Glu Cys His Lys Val Leu Ala Pro Ala Thr Phe Tyr
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Ala Met Cys Gln Pro Asp Ser Cys His Pro Lys Lys Val Cys Glu Ala
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Ile Ala Leu Tyr Ala His Leu Cys Arg Thr Lys Gly Val Cys Val Asp
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Trp Arg Arg Ala Asn Phe Cys Ala Met Ser Cys Pro Pro Ser Leu Val
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Tyr Asn His Cys Glu His Gly Cys Pro Arg Leu Cys Glu Gly Asn Thr
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Ser Ser Cys Gly Asp Gln Pro Ser Glu Gly Cys Phe Cys Pro Pro Asn
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Gln Val Met Leu Glu Gly Ser Cys Val Pro Glu Glu Ala Cys Thr Gln
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Cys Ile Ser Glu Asp Gly Val Arg His Gln Phe Leu Glu Thr Trp Val
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Arg Glu Ser Pro Pro Ser Cys Pro Pro His Arg Thr Pro Ala Leu Arg
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Lys Thr Gln Cys Cys Asp Glu Tyr Glu Cys Ala Cys Asn Cys Val Asn
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Ser Thr Val Ser Cys Pro Leu Gly Tyr Leu Ala Ser Ala Val Thr Asn
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Asp Cys Gly Cys Thr Thr Thr Thr Cys Phe Pro Asp Lys Val Cys Val
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His Arg Gly Thr Ile Tyr Pro Val Gly Gln Phe Trp Glu Glu Ala Cys
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Asp Val Cys Thr Cys Thr Asp Leu Glu Asp Ser Val Met Gly Leu Arg
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Val Ala Gln Cys Ser Gln Lys Pro Cys Glu Asp Asn Cys Leu Ser Gly
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Phe Thr Tyr Val Leu His Glu Gly Glu Cys Cys Gly Arg Cys Leu Pro
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His Trp Lys Asn Val Gly Ser His Trp Ala Ser Pro Asp Asn Pro Cys
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Leu Ile Asn Glu Cys Val Arg Val Lys Glu Glu Val Phe Val Gln Gln
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Arg Asn Val Ser Cys Pro Gln Leu Asn Val Pro Thr Cys Pro Thr Gly
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Ser His Phe Cys Lys Val Asn Glu Arg Gly Glu Tyr Ile Trp Glu Lys
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Gly Gly Lys Ile Met Lys Ile Pro Gly Thr Cys Cys Asp Thr Cys Glu
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Glu Pro Glu Cys Lys Asp Ile Ile Ala Lys Leu Gln Arg Val Lys Val
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Lys Cys Ala Ser Lys Ala Val Tyr Ser Ile His Met Glu Asp Val Gln
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Arg Cys His Pro Leu Val Asp Pro Glu Pro Ile Val Ala Leu Cys Glu
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Arg Thr Leu Cys Thr Cys Val Gln Gly Met Glu Cys Pro Cys Ala Val
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<400> 29
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